II. **Remarks**

Claims 1-20 of the present application are rejected and pending. By this paper, Applicants amend claims 1 and 11, cancel claim 2, and add claim 35. No new matter has been added. Reconsideration and a withdrawal of all rejections are respectfully requested.

Rejections Under 35 U.S.C. § 103(a)

Rejections Under *Ekendahl* in view of *GB '509*

Responsive to the rejections of claims 1-20 under 35 U.S.C. § 103(a) based on U.S. Patent No. 6,372,176 issued to *Ekendahl et al.* (hereinafter "*Ekendahl*") in view of GB 1,242,509 (hereinafter "*GB '509*"), the Examiner has not established a *prima facie* case of obviousness for claims 1-20. There is simply no suggestion or motivation to modify *Ekendahl* and combine the teachings of *GB '509*. For example, *Ekendahl* teaches heating thermoplastic sheets using "conventional heaters, such as infrared radiators" and "heating devices capable of heating thermoplastic materials...." (*See Ekendahl*, Col. 5, lines 53-63). On the other hand, *GB '509* teaches using only dielectric heating, specifically RF heating, to "heat ***polar*** thermoplastics, or thermoplastics containing polar groups, that is polar materials of high Dissipation Factor." (*See GB '509* page 1, lines 12-21; emphasis added). RF heating of thermoplastics is limited to polar thermoplastics having "sufficient polarity to respond to electromagnetic field energy." (*See GB '509*, page 1 lines 46-8). Therefore, such method of RF heating specific polar thermoplastics with high Dissipation Factor taught in *GB '509* is simply not contemplated by *Ekendahl*.

Moreover, the combination is improper, since the combination results in an inoperable or a non-effective product. As disclosed in *GB '509*, the efficacy of using RF heating to heat thermoplastics is "***contingent*** on the material having a high Dielectric Loss Factor, which in general terms is the same as the Dissipation Factor." (See *GB '509*, page 1, lines 28-31; emphasis added). In addition, it is well known in the art of RF heating that polyethylene, polypropylene, and polystyrene are among the materials that have very low Dissipation Factor and thus not responsive to the RF heating process. (*See* JD Ferry, *Viscoelastic Properties of Polymers* (New York:

Wiley, 1970), and S Saito and T Narajiman, *Journal of Applied Polymer Science* 2:1959, 93). One embodiment of the present invention includes thermoforming thermoplastic sheets having layers including high-density polyethylene and ethylene vinyl alcohol (*see* present application, page 9, lines 2-11) comprising materials that are not responsive to RF heating. Thus, the thermoplastic materials of the present application would not be responsive to the RF heating taught in *GB '509* and thus would result in a non-effective product.

Assuming *arguendo*, that *Ekendahl* and *GB '509* can be properly combined, the combination simply does not teach or suggest all the elements of the amended claims 1 and 11 and new claim 35. For example, amended claim 1 of the present invention recites "heating a plurality of thermoplastic sheets in a convection oven," whereas *GB '509* teaches heating "a stack of thermoplastic sheets in a primary cyclically operating Dielectric heating unit" (*see* page 3, lines 105-07). Under the teachings of *GB '509*, the thermoplastic sheets are heated in the "primary cyclically operating Dielectric heating unit" results in a "***hottest*** individual sheet" to be heated subsequently in the thermoforming cycle (*see* page 3, lines 7-32 and 102-16; emphasis added). Contrary to the present application, wherein the stack of thermoplastic sheets are heated to the same temperature, the RF heating method used by *GB '509* suggests that not all the thermoplastic sheets in the first heating stage are heated uniformly to the same temperature. Moreover, using the RF heating method, the number of sheets in the primary stack must be controlled so that "the time to heat the ***sheet*** in stacked form can be coordinated with the time to further heat the sheet **individually** in the secondary heating unit. . . ." (*See GB '509,* page 3, lines 23-8; emphasis added). In contrast, the present application teaches a method of pre-conditioning the thermoplastic sheets so that "[o]nce the pre-processing temperature is reached, the thermoplastic sheets are ***uniformly maintained at that temperature*** until needed." (*See* page 14, lines 11-13; emphasis added).

Claims 3-10, and 12-20 are dependent claims which depend generally from claim 1 or 11. Thus, claims 3-10, and 12-20 are allowable for the reasons provided above.

Rejections Under *Coninck*

Responsive to the rejection of claim 8 under 35 U.S.C. § 103(a) based on U.S. Patent No. 6,328,842 issued to *Coninck et al.* (hereinafter "*Coninck*"), *Coninck* does not teach or suggest all the elements of the rejected claim 8. Since claim 8 is dependent from claim 1, claim 8 is allowable for the reasons provided above.

Conclusion

In view of the above remarks, it is respectfully submitted that the present form of the claims are patentably distinguishable over the art of record. Thus, claims 1-20 and 35 are in a condition for allowance and such action is earnestly solicited.

Respectfully submitted,

November 17, 2004
Date

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